

**IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE**

TITLE:

GUTTER RETAINING SYSTEM

INVENTOR:

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BACKGROUND OF THE INVENTION

1. Field of The Invention

Applicant's invention relates to a gutter retaining system for affixing a gutter to a building. More specifically, the present invention relates to an interlocking system that incorporates a clip for affixing gutters to a retaining member on the eaves of a building that obviates the need for using nails or screws within the gutter itself, and to the structure installed according to the system, both preassembly and as assembled.

2. Background Information

For years property owners have struggled with the destructive effects of water on their buildings. However, by channeling the water away from the structure, building owners can reduce the damage caused by water. This can be accomplished through the use of a gutter system. Gutters are troughs that channel water from the eaves, being the horizontal lower edge of a roof, of a building to the downspouts. The downspouts are essentially drainpipes that drain water from the roof gutters. Gutters are a critical component of a building because they prevent moisture damage by channeling water off the roof and away from the foundation. But any damaged lengths of gutter or drain pipe caused by wear, improper installation, or sagging can cause leaks which can result in water damage to the building.

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3 Traditionally, gutters have been attached by nailing the gutter directly to the
4 building. Building contractors typically used a spike and ferrule system, in which a
5 narrow, tubular spacer, the ferrule, is placed between the front face of a gutter and
6 its rear face, ensuring that the front face remains at a uniform distance from the rear
7 face. A spike or long nail, is then punched through the outside of the front face of
8 the gutter, through the ferrule, through the back face of the gutter, and into the wall
9 or fascia of the structure.

10 Using the nail in this manner ruins the finished appearance of the gutter. In
11 addition, once the gutter is installed it ends up with its front face tilted forward
12 towards the ground. Once this occurs the captured rainwater and other material
13 tends to pool along the outer edge of the gutter. The weight of this material creates a
14 moment at the point of insertion of the nail, resulting in a force pulling the gutter
15 away from the wall. Further, while this manner of installation has the effect (at least
16 temporarily) of securing the gutter in place, it does not ensure that water will not run
17 behind the gutter. In any structure where water is allowed to run and collect behind
18 the gutter, eventually the integrity of the wood begins to weaken and the moment
19 forces referred to above slowly pull the nail and the gutter away from the building. In
20 periods of adverse weather, high winds can accelerate the process by getting behind
21 the gutter and forcing it completely away from the building.

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2 The utilization of gutter hangers is the most common way in which installers
3 have tried to improve the integrity and life of gutter systems. In this application, a
4 modified spacer is used, shaped like a flat plate, with both ends mined upward. One
5 end of this spacer is inserted under the lip of the front face of the gutter, while the
6 second end, with a pre-punched nail hole, is placed against the rear face of the
7 gutter. A nail or screw is then inserted through the nail hole, through the rear face of
8 the gutter, and into the building wall. A variation of this method includes placing the
9 second end of the spacer over the top of the rear face of the gutter. The spacer is
10 then nailed directly into the roof decking of the building or to the face of the wall,
11 under any existing shingles. These methods of installation eliminate the unsightly
12 appearance previously created by installing the nail or screw through the front face
13 of the gutter. However, these hangers do not prevent the collection of water behind
14 the gutter, nor relieve the moment created by the weight of the water pooling
15 outwardly within the gutter.

16 A further problem occurs with different types of construction. The building
17 may or may not include an additional small piece of fascia board under the eaves
18 which is not as long as the gutter. If a piece of fascia board does exist under the
19 eaves and the gutter system is in turn nailed to it, over time the portion of the gutter
20 which extends below the fascia board will sag towards the building. This sagging
21 can eventually cause leaks. Where no additional fascia board exists, this type of

1 sagging is not seen.

2 Because of the problems which have been associated with traditional gutter
3 systems and methods of installation, there is a need for a strong, sturdy gutter
4 system. In addition, this system should be adaptable to different types of
5 construction that may or may not incorporate an additional piece of fascia board. It
6 is desirable that installation be easy, while ensuring that any interlocking aspect of
7 the system is not compromised due to the primary construction of the building nor
8 during periods of high winds or other adverse weather conditions. Preferably, this
9 system should redistribute the water and other material captured within the gutter,
10 such that all moments that could result are negated. Furthermore, the system
11 should prevent any sagging due to construction that incorporates an additional piece
12 of fascia board.

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SUMMARY OF THE INVENTION

15 The present invention embodies a gutter retaining system for affixing a rain
16 gutter under the eaves of a building having a pitched roof. The gutter retaining system
17 incorporates a gutter clip which is used in conjunction with a rain gutter and a retaining
18 member. The gutter clip has an L-portion and a back portion. The back portion
19 includes an upper u-portion with a hanger which is used to slip the gutter clip over the
20 gutter. The back portion of the gutter clip also includes a nib end with a locking tip.
21 Nib end extends slightly beyond the dimensions of the hanger and can fit within a

1 hooked portion of the retaining member. This allows the locking tip to secure the gutter
2 clip and gutter in place along the eaves of the building.

3 The L-portion of the gutter clip is useful on buildings which incorporate an
4 additional piece of fascia board along the eaves in the construction. The L-portion fits
5 between the gutter and the wall of the building, incorporating a base extension which
6 can be fit against the building. In addition, the gutter clip is scored between the back
7 portion and the L-portion which allows these two portions to be separated when
8 desired, such as in the situation where no additional piece of fascia board is found
9 along the eaves of the building. Where the L-portion is removed from the back portion,
10 the L-portion would be discarded. In this situation, the vertical portion of the back
11 portion presses against the building.

12 **BRIEF DESCRIPTION OF THE DRAWINGS**

13 Fig. 1 is a front view of the gutter clip component of the preferred embodiment
14 of the present invention.

15 Fig. 2 is a side view of the gutter clip component of the preferred embodiment of
16 the present invention.

17 Fig. 3 is a cross-section view of the gutter clip component of the preferred
18 embodiment of the present invention shown overlapping a gutter.

19 Fig. 4A is a perspective view of the gutter clip component of the preferred
20 embodiment of the present invention with the L-portion removed.

21 Fig. 4B is a perspective view of the gutter clip component of the preferred

embodiment of the present invention retaining the L-portion.

Fig. 5 is a cross-section view of the gutter clip component of the preferred embodiment of the present invention retaining the L-portion as shown with a gutter and retaining member against a building.

Fig. 6 is a cross-section view of the gutter clip component of the preferred embodiment of the present invention without the L-portion with a gutter and retaining member against a building.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

In Figs. 1 and 2 a front view and side view, respectively, of the gutter clip 102 of the preferred embodiment of the present invention are shown. Gutter clip 102 is essentially L-shaped incorporating an L-portion 158, a back portion 160, a front face 120 and back face 118. Beginning at the back portion 160 is locking tip 134 which is contiguous into nib end 106. Nib end 106 transitions into hanger 108 via junction 136. Hanger 108 is contiguous with upper u-portion 110. Upper u-portion 110 continues into vertical portion 162. Vertical portion 162 transitions into L-portion 158 which begins at first elbow 112. Scoring can be used on first elbow 112 to allow L-portion 158 to be easily separated from back portion 160. First elbow 112 turns into base 114 which proceeds into second elbow 116. Second elbow 116 turns up into base extension 130. Base extension 130 is contiguous with lower u-portion 132, lower u-portion 132 being completed at end

1 138.

2 Fig. 3 shows a cross section view of the gutter clip 102 of the preferred
3 embodiment of the present invention overlapping a gutter 104. Gutter clip 102,
4 gutter 104, and retaining member 122 make up a gutter retaining system 100.
5 Gutter clip 102 is as mentioned essentially L-shaped incorporating an L-portion 158
6 (See Fig. 2), a back portion 160 (See Fig. 2), a front face 120 and back face 118.
7 Beginning at the back portion 160 (See Fig. 2) is locking tip 134 which is adjacent
8 nib end 106. Nib end 106 transitions into hanger 108 via junction 136. Hanger
9 108 continues into upper u-portion 110. The portion of gutter clip 102 from
10 locking tip 134 to upper u-portion 110 fits inside the back wall 124 of gutter 104.
11 Upper u-portion 110 can be crimped to secure gutter clip 102 snugly to gutter 104.
12 Back face 118 fits against the outside of the back wall 124 of gutter 104 from
13 upper u-portion 110 to first elbow 112. Upper u-portion 110 of gutter clip 102
14 continues into vertical portion 162. Vertical portion 162 transitions into L-portion
15 158 (See Fig. 2) which begins at first elbow 112. First elbow 112 turns into base
16 114 which proceeds into second elbow 116. Second elbow 116 turns up into base
17 extension 130. Base extension 130 is contiguous with lower u-portion 132, lower
18 u-portion 132 being completed at end 138. The remainder of gutter 104 includes a
19 gutter channel 156, front wall 126 and lip 128.

20 Fig. 4A is a perspective view of the gutter clip 102 of the preferred
21 embodiment of the present invention with the L-portion 158 (See Fig. 2) removed.

1 Beginning at the back portion 160 (See Fig. 2) is locking tip 134 (See Fig. 3) which
2 is contiguous into nib end 106 (See Fig. 3). Nib end 106 (See Fig. 3) transitions
3 into hanger 108 (See Fig. 3) via junction 136 (See Fig. 3). Hanger 108 (See Fig.
4 3) is contiguous with upper u-portion 110. Upper u-portion 110 can be crimped to
5 secure gutter clip 102 snugly to gutter 104. Back face 118 (See Fig. 3) fits against
6 the outside of the back wall 124 of gutter 104. Upper u-portion 110 of gutter clip
7 102 continues into vertical portion 162.

8 In Fig. 4B a perspective view of the gutter clip 102 of the preferred
9 embodiment of the present invention retaining the L-portion 158 (See Fig. 2) is
10 shown. Beginning at the back portion 160 (See Fig. 2) is locking tip 134 (See Fig.
11 3) which is contiguous into nib end 106 (See Fig. 3). Nib end 106 (See Fig. 3)
12 transitions into hanger 108 (See Fig. 3) via junction 136 (See Fig. 3). Hanger 108
13 (See Fig. 3) is contiguous with upper u-portion 110. The portion of gutter clip 102
14 from locking tip 134 (See Fig. 3) to upper u-portion 110 fits inside the back wall
15 124 of gutter 104. Upper u-portion 110 can be crimped to secure gutter clip 102
16 snugly to gutter 104. Back face 118 (See Fig. 3) fits against the outside of the back
17 wall 124 of gutter 104 from upper u-portion 110 to first elbow 112. Upper u-
18 portion 110 of gutter clip 102 continues into vertical portion 162. Vertical portion
19 162 transitions into L-portion 158 (See Fig. 3) which begins at first elbow 112.
20 First elbow 112 turns into base 114 which proceeds into second elbow 116.
21 Second elbow 116 turns up into base extension 130. Base extension 130 is

1 contiguous with lower u-portion 132, lower u-portion 132 being completed at end
2 138.

3 Fig. 5 is a cross-section view of the gutter clip 102 of Fig. 4B of the preferred
4 embodiment of the present invention retaining the L-portion 158 (See Fig. 2) as
5 shown with a gutter 104 and retaining member 122 against a building 150.

6 Beginning at the back portion 160 (See Fig. 2) is locking tip 134 which is
7 contiguous into nib end 106. Nib end 106 transitions into hanger 108 via junction
8 136. Hanger 108 is contiguous with upper u-portion 110. The portion of gutter
9 clip 102 from locking tip 134 to upper u-portion 110 fits inside the back wall 124
10 of gutter 104. Upper u-portion 110 can be crimped to secure gutter clip 102
11 snugly to gutter 104.

12 Front face 120 fits against mounting lip 146 of retaining member 122.

13 Mounting lip 146 ends in horizontal section 142. One end of horizontal section
14 142 proceeds under the roof 152 tiles 164 while the remaining end drops into a
15 return 140. Return 140 ends in hooked portion 144. Nib end 106 extends slightly
16 beyond the dimensions of hanger 108 and therefore can fit within hooked portion
17 144 to allow locking tip 134 to secure gutter clip 102 and gutter 104 in place. The
18 back of mounting lip 146 presses against a fascia board 148 on building 150. The
19 thickness of L-portion 158 (See Fig. 2) is approximately equal to the thickness of
20 fascia board 148 to allow for base extension 130 to fit properly against building
21 150. In buildings 150 which incorporate this fascia board 148, L-portion 158 (See

1 Fig. 2) provides stability to gutter 104 to prevent gutter 104 from sagging towards
2 building 150. The vertical portion 162 of gutter clip 102 as well as the upper u-
3 portion 110, hanger 108, nib end 106, junction 136 and locking tip 134 of gutter
4 clip 102 are positioned under the eaves 154 of building 150. A portion of
5 horizontal section 142, return 140 and hooked portion 144 of retaining member
6 122 are positioned under the eaves 154 of building 150 as is gutter 104.

7 Back face 118 (See Fig. 3) fits against the outside of the back wall 124 of
8 gutter 104 from upper u-portion 110 to first elbow 112. Upper u-portion 110 of
9 gutter clip 102 continues into vertical portion 162. Vertical portion 162 transitions
10 into L-portion 158 (See Fig. 2) which begins at first elbow 112. First elbow 112
11 turns into base 114 which proceeds into second elbow 116. Second elbow 116
12 turns up into base extension 130. Base extension 130 is designed to fit against
13 building 150. Base extension 130 is contiguous with lower u-portion 132, lower u-
14 portion 132 being completed at end 138. The remainder of gutter 104 includes a
15 gutter channel 156, front wall 126 and lip 128.

16 Fig. 6 shows a cross-section view of the gutter clip 102 of Fig. 4A of the
17 preferred embodiment of the present invention without the L-portion 158 (See Fig.
18 2) with a gutter 104 and retaining member 122 against a building 150. Beginning
19 at the back portion 160 (See Fig. 2) is locking tip 134 which is contiguous into nib
20 end 106. Nib end 106 transitions into hanger 108 via junction 136. Hanger 108
21 is contiguous with upper u-portion 110. The portion of gutter clip 102 from locking

1 tip 134 to upper u-portion 110 fits inside the back wall 124 of gutter 104. Upper
2 u-portion 110 can be crimped to secure gutter clip 102 snugly to gutter 104.

3 Front face 120 fits against mounting lip 146 of retaining member 122.

4 Mounting lip 146 ends in horizontal section 142. One end of horizontal section
5 142 proceeds under the roof 152 tiles 164 while the remaining end drops into a
6 return 140. Return 140 ends in hooked portion 144. Nib end 106 extends slightly
7 beyond the dimensions of hanger 108 and therefore can fit within hooked portion
8 144 to allow locking tip 134 to secure gutter clip 102 and gutter 104 securely in
9 place. The back of mounting lip 146 presses against building 150. The vertical
10 portion 162 of gutter clip 102 as well as the upper u-portion 110, hanger 108, nib
11 end 106, junction 136 and locking tip 134 of gutter clip 102 are positioned under
12 the eaves 154 of building 150. A portion of horizontal section 142, return 140 and
13 hooked portion 144 of retaining member 122 are positioned under the eaves 154 of
14 building 150 as is gutter 104. Back face 118 (See Fig. 3) fits against the outside of
15 the back wall 124 of gutter 104. Upper u-portion 110 of gutter clip 102 continues
16 into vertical portion 162. The remainder of gutter 104 includes a gutter channel
17 156, front wall 126 and lip 128.

18 Although the invention has been described with reference to specific
19 embodiments, this description is not meant to be construed in a limited sense.
20 Various modifications of the disclosed embodiments, as well as alternative
21 embodiments of the inventions will become apparent to persons skilled in the art

1 upon the reference to the description of the invention. It is, therefore, contemplated
2 that the appended claims will cover such modifications that fall within the scope of
3 the invention.